

Appl. No. 09/679,767
Amdt. dated October 6, 2004
Reply to Office Action of July 15, 2004

REMARKS/ARGUMENTS

Claims 1-33 are pending in this application.

Claims 1-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,904,812 to Salman et al. in view of U.S. 5,494,554 to Edwards et al. and U.S. 5,655,132 to Farrington et al. Salman et al. teaches bath tissue having 500-900 sheets per roll. Edwards et al. teaches a method of making softer creped, wet-pressed tissues with a lower tendency to produce lint. Specific examples disclose creped tissue sheets having a Void Volume of from 7 to 11.7. Farrington et al teaches soft, high bulk uncreped throughdried tissues. The rejection is cumulatively based on three different independent combinations of the teachings of two references and each of those combinations are addressed below.

Specifically, it is first asserted that Salman et al. substantially discloses Applicants' invention, although it is conceded that Salman et al. fails to disclose a basesheet having a Void Volume of about 8 or greater. Edwards et al. teaches tissue sheets having a Void Volume of 8 or greater. It is therefore concluded that it would be obvious to provide the tissue of Salman et al. with a Void Volume of 8 or greater "in order to provide softer wet-pressed tissues with a lesser tendency to produce lint as taught by Edwards et al."

As an initial matter, Applicants take issue with the statement that Salman et al. substantially discloses Applicants' invention. Not only does Salman et al. fail to disclose tissues having a Void Volume of about 8 or greater, Salman et al. also fails to disclose tissues having a geometric mean stretch of about 11% or less and tissues having a single sheet caliper of about 0.01 inch or less. Consequently Salman et al fails to disclose all three of the claimed properties of Applicants' invention.

In addition, it is asserted that Edwards et al. teaches a Void Volume of about 8 or greater "for the purpose of providing softer wet-pressed tissues with a lesser tendency to produce lint." This is incorrect. While Edwards et al. does teach wet-pressed tissues having a Void Volume of 8 or greater, the Void Volume is not the cause of the lint reduction, but instead is a result of more uniform creping. Therefore one of ordinary skill in the art would not seek to provide the tissue sheet of Salman et al. with a Void Volume of 8 or greater for the purpose of reducing lint.

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The second combination of references used as part of the basis for rejection is Salman et al., in view of Farrington et al. It is again asserted that Salman et al. discloses Applicants' invention substantially as claimed, while acknowledging that Salman et al. fails to disclose a tissue sheet having a single sheet caliper of about 0.01 inch or less. It is stated that Farrington et al. discloses a single sheet caliper of 0.01 inch or less and therefore it would be obvious "to have provided a base sheet having a single sheet caliper of about 0.01 inch or less, or 0.0095 inch or less in the base sheet of Salman et al. in order to provide high bulk and low stiffness as taught or suggested by Farrington et al." While Farrington et al. does disclose one example of a tissue sheet having a single sheet caliper of 0.0094 inch (Example 13 in Table 1), it does not follow that providing the tissue sheet of Salman et al. with such a low caliper would "provide high bulk and low stiffness as taught or suggested by Farrington, Jr. et al." Those skilled in the art seeking to increase the bulk of any tissue sheet would do just the opposite since, for a given basis weight, increasing the bulk requires increasing the caliper ("bulk" is "caliper" divided by "basis weight"). The mere fact that Farrington et al. happens to disclose a single example of a tissue sheet within Applicants' claimed caliper range does make it obvious to one of ordinary skill in the art to modify the tissue sheet of Salman et al. to attain that caliper value. In fact, a fair reading of Farrington et al. taken as a whole with regard to caliper values suggests much higher calipers, since the other nineteen examples have caliper values above Applicants' claimed maximum value of 0.0100 inch.

The third combination of references used as part of the basis for rejection is again Salman et al. and Farrington et al. For this combination, it is asserted that Salman et al. and Farrington et al. disclose the claimed invention except for the geometric mean stretch. This is not correct, since neither Salman et al. nor Farrington et al. describe the Void Volume values claimed by Applicants. With regard to the geometric mean stretch, it is asserted that one of ordinary skill in the art would have recognized that the geometric mean stretch claimed by Applicants would be readily determined. Applicants agree with this statement, although it is not clear how this forms a basis for rejection. All of Applicants' claimed properties can be readily measured by one of ordinary skill in the art. The rejection further asserts that it would have been obvious for one of ordinary skill in the art to have provided the claimed geometric mean stretch values in order to provide high bulk and low stiffness. Applicants do not follow this reasoning. Neither Salman et al. nor Farrington et al. equate Applicants' claimed geometric mean stretch values with high bulk and low stiffness. If one of ordinary skill wished to increase the bulk and lower the stiffness of the tissue sheets of Salman et al., there is nothing in Farrington et al. to suggest that Applicants' claimed range of geometric mean stretch values would accomplish that objective.

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In connection with the foregoing basis for rejection, it is stated that where general conditions of a claim are disclosed in the prior art, discovering the optimum workable ranges or the optimum value of a result effective variable involves only routine skill in the art. While this is true, there must also be some recognized motivation to optimize. In Applicants' case, there is no teaching or suggestion in the prior art that Applicants' claimed combination of properties or variables (geometric mean stretch, single sheet caliper and Void Volume) should be "optimized" to within the claimed ranges. Obviously, all of these properties are known to those skilled in the art but, prior to Applicants' invention, it was not appreciated that bath tissue having a geometric mean stretch of about 11% or less, a single sheet caliper of about 0.01 inch or less and a Void Volume of about 8.0 grams or greater per gram of tissue was a desirable combination of properties. Applicants have found that achieving this combination of properties by properly calendering a basesheet with the necessary Void Volume to reduce caliper and stretch produces a soft tissue with good absorbent capacity that can be wound into a roll having a high sheet count. This is not suggested by the cited prior art and therefore is believed to be patentable.

It is therefore believed that this application is now in condition for allowance and such action is earnestly solicited.

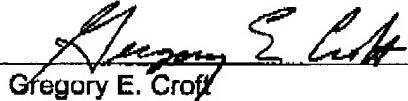
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The undersigned may be reached at: (920) 721-3616.

Respectfully submitted,

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Page 9 of 9

PAGE 9/9 * RCVD AT 10/6/2004 12:11:32 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/0 * DNI:8729306 * CSID:920 721 3129 * DURATION (mm:ss):02:46 5E.09 **